MASTER PLAN NARRATIVE & ORGANIZATION

1

- INTRODUCTION

- COMPONENTS OF THIS REPORT

- SUMMARY OF OPTIONS

- PROJECTED NEED

- TRENDS AND PROJECTIONS

INTRODUCTION

The Architectural firm of Crabtree Rohrbaugh & Associates has been engaged by the State of New Hampshire to prepare this Facility Needs Assessment and Comprehensive Master Plan. Crabtree, Rohrbaugh & Associates teamed with the Correctional Planning firm of Carter Goble Lee, Inc. to complete this work.

The Scope of this report includes the following:

A. Survey & Document Existing Conditions at all New Hampshire State Correctional Facilities

B. Document Correctional Trends in New Hampshire

C. Evaluate Alternatives to Incarceration and their potential impact on the State Prison Population

D. Prepare Prison Population Projections for 5, 10 & 20 Year Periods

E. Determine the Current and Long term (5 , 10 & 20 Year) Correctional needs of New Hampshire.

F. Establish the Building Program Requirements for each State Correctional Facility based upon Projected Population Growth.

G. Develop Construction Options to Meet the Current and Long Term Needs.

H. Prepare Construction Cost Estimates for Each Option.

I. Prepare Operating Cost Estimates for Each Option.

J. Compare Life Cycle Costs of Each Option.

K. Develop Conclusions and Recommendations.

In establishing the above information, the following tasks were undertaken:

A. Program Interviews were completed with the following individuals:

    1. New Hampshire Bureau of Public Works Design & Construction

        Mark D. Whittemore, P. E. - Administrator

        Michelle L. Juliano, P. E. - Assistant Administrator

        Robert W. Smith R.A. - Project Manager

    2. New Hampshire Department of Corrections

        William L. Wrenn - Commissioner

        William McGonagle - Assistant Commissioner

        Robert Mullen, CPA - Director of Administration

        Don Andrews - Administrator of Services

        Bob MacLeod - Director of Medical and Forensic Services

        Helen Hanks, MM - Assistant Director of Medical and Forensic Services

        Lori Seog - Administrator of Programs

2   Continued

       Kim Lacasse - Administrator of Classification

       Richard M. Gerry - Warden NHSP/M

       Joanne Fortier - Warden NHSP/W

       Jane Coplan - Warden Lakes Region Facility

       Larry D. Blaisdell - Warden NNHCF

       Frank McKone - Unit Manager - Calumet House

       Grady Alexander - Unit Manager - North End House

       Christine Cook - Unit Manager - Shea Farm

       John Fouts - Major NHSP/M

3   New Hampshire Department of Safety

       Ronald Anstey - Investigator

B   A Detailed Field Analysis and Documentation of each Existing Facility was completed.

C   Existing Operating Procedures were observed, and operating manuals have been reviewed.

D   Statistical Information, Compiled by the New Hampshire Department of Corrections was analyzed.

E   New Hampshire Statutory Requirements were reviewed.

F   American Correctional Association Standards were reviewed.

Historical population data obtained from the New Hampshire Department of Corrections and Facility Administration revealed that, like most prison trends, the average daily population has significantly increased over the past ten years. This increase has resulted in the addition of beds, taking the facilities beyond their initial design capacity and resulting in a shortage of bed and support space.

The purpose of this study is to determine the most cost effective means of addressing the current and future housing needs of the State. Additionally, this study will evaluate the condition of existing building systems and establish requirements for upgrading these systems to conform with current building codes and standards.

COMPONENTS OF THIS REPORT

The Components of this Report include the following:

COMPONENTS OF THIS REPORT - Continued

4	Summary of Options
	Options Overview
	Component Options including Function & Area Summaries and Proposed Drawings
5	Staffing Analysis by Recommended Component
6	Estimated Cost Analysis by Recommended Component
7	Building Systems Analysis
	Recommendations & Maintenance Cost Estimates for each Existing Building
8	Operating Budget Analysis by Component
9	Alternatives to Incarceration

Volume 2 - Appendix

1	Existing Facility Narratives
	Narrative Write-ups of each Existing Facility
2	Existing Conditions Function & Area Summaries
	Square Footage Documentation of each Existing Facility
3	Housing Capacity Summary
4	Building Systems Narratives
	Narrative Write-ups of the Building Systems for each Existing Facility
	Recommendations & Maintenance Cost Estimates for each Existing facility

SUMMARY OF OPTIONS - OVERVIEW

THROUGH EVALUATION OF EACH OF THE STATES EXISTING FACILITIES AND SITES, TEN COMPONENTS OF BUILDING EXPANSION WERE IDENTIFIED AND STUDIED. THESE COMPONENTS FALL INTO RECOMMENDED AND NON-RECOMMENDED CATEGORIES WITH THE RECOMMENDED COMPONENTS BEING CONSIDERED ELEMENTS OF THE STATES COMPREHENSIVE MASTER PLAN. THE SUGGESTED FISCAL YEAR FOR IMPLEMENTATION IS NOTED FOR EACH RECOMMENDED COMPONENT.

THE RECOMMENDED COMPONENTS ARE AS FOLLOWS:

A
COMPONENT 'A' - 328 FEMALE BEDS - FISCAL YEAR 2010-2011
CONSTRUCT A NEW WOMEN'S PRISON TO REPLACE THE LEASED FACILITY AT GOFFSTOWN AND SHEA FARM WITH 128 C-1/C-2 BEDS (IN 4 - 32 BEDS DORMS), 176 C-3 BEDS (DOUBLE OCCUPANCY CELLS), 16 C-4 BEDS (DOUBLE OCCUPANCY CELLS) AND 8 C-5 FEMALE BEDS (SINGLE OCCUPANCY CELLS).

C
COMPONENT 'C' - 64 MALE BEDS EACH - FISCAL YEAR 2010-2011
CONSTRUCT UP TO FOUR NEW C-1 TRANSITIONAL HOUSING UNITS FOR MEN AT LOCATIONS AROUND THE STATE. EACH FACILITY WOULD HAVE TWO 32 BED UNITS.

F
COMPONENT 'F' - 64 MALE BEDS - FISCAL YEAR 2012-2013
CONSTRUCT A NEW 64 BED C-2 DORMITORY FACILITY AT THE NORTHERN NEW HAMPSHIRE CORRECTIONAL FACILITY TO HOUSE WORK DETAIL INMATES. THIS COMPONENT IS PROPOSED TO BE ATTACHED TO A NEW COUNTY JAIL (COMPONENT E) ON THE N.N.H.C.F. SITE FOR USE BY COOS COUNTY.

K
COMPONENT 'K' - 64 MALE BEDS - FISCAL YEAR 2012-2013
CONSTRUCT A NEW, STAND ALONE, 64 BED C-2 DORMITORY FACILITY AT THE NORTHERN NEW HAMPSHIRE CORRECTIONAL FACILITY TO HOUSE WORK DETAIL INMATES. THIS COMPONENT WOULD BE IN LIEU OF COMPONENT 'F' IF THE COOS COUNTY JAIL (COMPONENT 'E') DOES NOT GET BUILT.

G
COMPONENT 'G' - 496 MALE BEDS - FISCAL YEAR 2012-2013
CONSTRUCT A NEW 496 BED C-3 MALE HOUSING UNIT AT THE NORTHERN NEW HAMPSHIRE CORRECTIONAL FACILITY WHICH WAS MASTER PLANNED AT INITIAL DESIGN.

H
COMPONENT 'H' - NEW R&D FACILITY - FISCAL YEAR 2014-2015
CONSTRUCT A NEW RECEPTION AND DIAGNOSTIC FACILITY AT THE NEW HAMPSHIRE STATE PRISON FOR MEN IN CONCORD, HOUSING 256 MALES IN FOUR 64 BED UNITS.

L
COMPONENT 'L' - PROPOSED LETHAL INJECTION CHAMBER
CONSTRUCT A LETHAL INJECTION CHAMBER TO ADDRESS THE POTENTIAL OF FUTURE CAPITAL CRIME CONVICTIONS

M
COMPONENT 'M' - DEPARTMENT HEADQUARTERS OFFICE NEEDS
NARRATIVE ADDRESSING DEPARTMENT HEADQUARTERS EXISTING CONDITIONS AND OFFICE SPACE NEEDS TO HANDLE CURRENT SHORTAGES AND DEPARTMENT GROWTH

N
COMPONENT 'N' - EXPANSION OF THE R.T.U. IN S.P.U. BUILDING
NARRATIVE ADDRESSING EXPANSION OF THE NEW RESIDENTIAL TREATMENT UNIT LOCATED IN S.P.U. AND THE ASSIGNMENT OF THE S.P.U. TO THE DEPARTMENT OF HEALTH AND HUMAN SERVICES.

THE STUDIED BUT NON-RECOMMENDED COMPONENTS ARE AS FOLLOWS:

D **COMPONENT 'D' - 40 MALE BEDS**
RENOVATE THE EXISTING SPAULDING BUILDING AT THE LAKES REGION FACILITY, CURRENTLY LEASED TO ANOTHER AGENCY, INTO A 40 BED C-1 TRANSITIONAL WORK UNIT FOR MEN.

REASON: A 40 BED UNIT, EVEN AS A C-1 TRANSITIONAL WORK UNIT IS NOT A STAFF EFFICIENT MODEL. THE MODEL TRANSITIONAL WORK UNIT RECOMMENDED IS FOR 64 BEDS AS IN COMPONENT 'C'

J **COMPONENT 'J' - 128 MALE BEDS**
CONSTRUCT A NEW 128 BED C-1/C-2 STAND ALONE DORMITORY FACILITY AT THE NORTHERN NEW HAMPSHIRE CORRECTIONAL FACILITY. THIS FACILITY WOULD HOUSE BOTH WORK DETAIL INMATES FOR THE N.N.H.C.F AND WORK RELEASE INMATES AND WOULD BE IN LIEU OF COMPONENTS 'F' OR 'K' IF THE PROPOSED COOS COUNTY JAIL (COMPONENT 'E') DOES NOT GET BUILT.

REASON: ALTHOUGH C-2 WORK DETAIL BEDS ARE NEEDED AT THE NORTHERN NEW HAMPSHIRE CORRECTIONAL FACILITY TO ALLOW THE C-2 INMATES CURRENTLY HOUSED WITHIN THE EXISTING FACILITY IN C-4 BEDS TO FREE UP THAT BED SPACE FOR A MORE APPROPRIATE USE, THE ADDITIONAL C-1 BEDS TO MAKE THIS A 128 BED FACILITY WOULD ADD AN UNNECESSARY BURDEN TO THE ALREADY DIFFICULT JOB MARKET IN THE BERLIN AREA. COMPONENTS 'E' OR 'K' WOULD BE MUCH MORE APPROPRIATE AND WOULD HANDLE THE C-2 WORK DETAIL INMATE NEEDS OF THIS FACILITY.

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ADMINISTRATIVE SERVICES
BUREAU OF PUBLIC WORKS DESIGN & CONSTRUCTION
DEPARTMENT OF CORRECTIONS - COMPREHENSIVE MASTER PLAN

7/10/2008

PROJECTED NEED

MALE AND FEMALE HOUSING NEED BY SECURITY LEVEL

THE 2010 NEED HIGHLIGHTED IN GREEN REPRESENTS THE TOTAL NUMBER OF BEDS THAT MUST BE ADDED TO THE NEW HAMPSHIRE CORRECTIONAL SYSTEM TO MEET PROJECTED NEED FOR THE YEAR 2010

THE 2015 NEED HIGHLIGHTED IN BLUE REPRESENTS THE TOTAL NUMBER OF BEDS THAT MUST BE ADDED TO THE NEW HAMPSHIRE CORRECTIONAL SYSTEM TO MEET PROJECTED NEED FOR THE YEAR 2015

THE 2020 NEED HIGHLIGHTED IN TAN REPRESENTS THE TOTAL NUMBER OF BEDS THAT MUST BE ADDED TO THE NEW HAMPSHIRE CORRECTIONAL SYSTEM TO MEET PROJECTED NEED FOR THE YEAR 2020

	CURRENT BEDS AVAIL.	% REQ. BY CLASS.	PROJECTED NEED					2010 NEED	2015 NEED	2020 NEED
			2010	2015	2020	2025	2030			
MALE HOUSING										
% BEDS BY GENDER			93.45%	92.60%	91.63%	90.54%	89.31%			
C-1	92	13.82%	419	464	508	549	587	327	372	416
C-2	444	18.72%	567	629	688	743	795	123	185	244
C-3	1321	56.33%	1706	1892	2070	2236	2392	385	571	749
C-4	120	4.32%	131	145	159	171	183	11	25	39
C-5	96	1.17%	35	39	43	46	50	-61	-57	-53
R&D, Q & P/C	168	5.64%	171	189	207	224	240	3	21	39
	2241	100%	3029	3359	3674	3969	4247	788	1118	1433
FEMALE HOUSING										
% BEDS BY GENDER			6.55%	7.40%	8.37%	9.46%	10.69%			
C-1	26	13.61%	29	37	46	56	69	3	11	20
C-2	14	29.84%	63	80	100	124	152	49	66	86
C-3	88	51.83%	110	139	174	215	263	22	51	86
C-4	16	2.09%	4	6	7	9	11	-12	-10	-9
C-5	1	0.00%	0	0	0	0	0	-1	-1	-1
R&D, Q & P/C	14	2.62%	6	7	9	11	13	-8	-7	-5
	159	100%	212	268	336	415	508	53	109	177
TOTAL HOUSING C-1, C-2, C-3, C-4, C-5			3241	3627	4010	4384	4755			
SPECIAL HOUSING										
SPU	40		40	40	40	40	40	0	0	0
RTU	40		40	40	40	40	40	0	0	0
	80		80	80	80	80	80			
TOTAL HOUSING WITH SPU & RTU			3321	3707	4090	4464	4835			

Note: Negative numbers indicate excess capacity.

Note: The "% REQUIRED BY CLASSIFICATION" column highlighted in PINK represents the projected percentage of beds required by classification and gender and applies to each of the PROJECTED NEED study periods. The projected number of beds indicated by classification, as required in each study period is the "TOTAL HOUSING" required, highlighted in purple, multiplied by the "% BEDS BY GENDER" (male or female) figure multiplied by the "% REQUIRED BY CLASSIFICATION".

THE STATE OF NEW HAMPSHIRE

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PROJECTED NEED

RECOMMENDED COMPONENTS

TO MEET THE PROJECTED NEED, THE FOLLOWING HOUSING COMPONENTS HAVE BEEN IDENTIFIED AS POTENTIAL ADDITIONS TO THE NEW HAMPSHIRE CORRECTIONAL SYSTEM.

		BED CLASS.	NEW BEDS CONSTRUCTED	BEDS TAKEN OUT OF SERVICE	TOTAL NET GAIN - NEW BEDS
A'	NEW 328 BED FEMALE PRISON	C-1	64	26	38
		C-2	64	14	50
		C-3	176	88	88
		C-4	16	16	0
		C-5	8	1	7
		R&D	0	14	-14
			328	159	169

Note: The "Beds Taken Out of Service" column does not represent any beds for female inmates housed at Strafford County since they are not State owned or leased.

		BED CLASS.	NEW BEDS CONSTRUCTED	BEDS TAKEN OUT OF SERVICE	TOTAL NET GAIN - NEW BEDS
C'	NEW C-1 TRANS. HOUSING UNITS (FIVE 64 BED FACILITIES)	C-1	320	0	320
			320	0	320
F'	NEW C-2 HOUSING UNIT AT N.N.H.C.F.	C-2	64	0	64
			64	0	64

Note: The 0 beds indicated in the "Beds Taken Out of Service" column do not represent the 25 cells (25 beds at single occupancy or 50 beds at double occupancy) being vacated by these C-2 inmates housed in the Administrative Segregation Unit at the N.N.H.C.F. since these beds are not being taken out of service, just vacated for a more appropriate classification. The 64 new beds are all counted as "NEW".

		BED CLASS.	NEW BEDS CONSTRUCTED	BEDS TAKEN OUT OF SERVICE	TOTAL NET GAIN - NEW BEDS
G'	NEW C-3 HOUSING UNIT AT N.N.H.C.F.	C-3	496	0	496
			496	0	496
H'	NEW R & D UNIT AT N.H.S.P/M	QUAR. & P.C.	256	168	88
			256	168	88
		TOTAL	1464	327	1137

Note: The "NEW BEDS CONSTRUCTED" column highlighted in GREEN represents the total beds to be constructed under each recommended component of this study. The "BEDS TAKEN OUT OF SERVICE" column highlighted in BLUE represents existing beds currently in the system that will be replaced by newly constructed beds. The "TOTAL NET GAIN" column highlighted in TAN represents the delta of "ADDITIONAL" beds to the system.

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CAPACITY AT COMPLETION OF RECOMMENDED COMPONENTS

UPON COMPLETION OF COMPONENTS A, C, F, G & H, THE SYSTEM CAPACITY WILL BE AS FOLLOWS:

	NEW TOT. BEDS AVAIL.	% REQ. BY CLASS.	PROJECTED NEED					2010 STATUS	2015 STATUS	2020 STATUS
			2010	2015	2020	2025	2030			
MALE HOUSING										
% MALE BEDS			93.45%	92.60%	91.63%	90.54%	89.31%			
C-1	412	13.82%	419	464	508	549	587	7	52	96
C-2	508	18.72%	567	629	688	743	795	59	121	180
C-3	1817	56.33%	1706	1892	2070	2236	2392	-111	75	253
C-4	120	4.32%	131	145	159	171	183	11	25	39
C-5	96	1.17%	35	39	43	46	50	-61	-57	-53
R&D, Q & P/C	256	5.64%	171	189	207	224	240	-85	-67	-49
	3209	100%	3029	3359	3674	3969	4247	-180	150	465
FEMALE HOUSING										
% FEMALE BEDS			6.55%	7.40%	8.37%	9.46%	10.69%			
C-1	64	13.61%	29	37	46	56	69	-35	-27	-18
C-2	64	29.84%	63	80	100	124	152	-1	16	36
C-3	176	51.83%	110	139	174	215	263	-66	-37	-2
C-4	16	2.09%	4	6	7	9	11	-12	-10	-9
C-5	8	0.00%	0	0	0	0	0	-8	-8	-8
R&D, Q & P/C	0	2.62%	6	7	9	11	13	6	7	9
	328	100%	212	268	336	415	508	-116	-60	8
TOTAL HOUSING C-1, C-2, C-3, C-4, C-5			3241	3627	4010	4384	4755			
SPECIAL HOUSING										
SPU	40		40	40	40	40	40	0	0	0
RTU	40		40	40	40	40	40	0	0	0
	80		80	80	80	80	80	0	0	0
TOTAL HOUSING WITH SPU & RTU			3321	3707	4090	4464	4835			

REMARKS

Upon completion of all of the recommended components, the "2010 STATUS" column, highlighted in GREEN, reveals that sufficient male and female bed capacity will exist to meet the needs of the State of New Hampshire.

The "2015 STATUS" column, highlighted in BLUE, reveals that sufficient female capacity will exist, and that male capacity will be 238 beds below the projected need. It should be noted that population projections are based upon historical trends. As is noted in this report under Section 9, the current population of the system is being influenced by a lack of available C-1 and C-2 beds. Upon completion of Components C & F, this shortage of C-1 and C-2 beds will be resolved which will expedite the release of C-1 and C-2 inmates, thereby reducing the need for C-1 and C-2 beds by 2015. Accordingly, it is recommended that population data be monitored to confirm the positive impact of adding C-1 and C-2 beds so that adequate time is available for development of additional C-1 and C-2 beds, if needed.

The "2020 STATUS" column, highlighted in TAN, reveals that the female facility will be at capacity and that additional male capacity will be required. Population trends should be monitored to verify the quantity and security classification of new beds required to meet this need.

Trends & Projections

State Population

According to population estimates prepared by the US Census Bureau, the population of the state of New Hampshire has experienced steady growth over the last 10 years, increasing by 126,000 since 1997 to reach a population of 1,311,821 in 2007. This represents an overall 10-year growth of 10.6% and an annual growth of 1.02%. Table 1 below presents the annual population estimates of New Hampshire from 1997 to 2007 as reported by the US Census Bureau.

Table 1
New Hampshire Historical State Population

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
State Pop.	1,189,425	1,205,940	1,222,014	1,235,786	1,257,347	1,272,185	1,282,844	1,294,285	1,303,112	1,311,821	1,315,828

Source: US Census Bureau	10-year Growth	10.63%	Annual Growth	1.02%

County-level population estimates for New Hampshire from 1996 to 2006, also reported by the US Census Bureau, are presented in Table 2 below. Among the counties that experienced the largest growth from 1996 to 2006 are Carroll (19%), Belknap (16.1%), and Merrimack (15.3%). New Hampshire's largest county, Hillsborough, grew by 12.3%. The second largest, Rockingham, grew by 13.3%. The only county to decline in population was the state's smallest, Coos County, which experienced a decrease of 1.6%.

Table 2
New Hampshire Historical Population by County

County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	10-year Growth
Belknap	53,020	53,391	54,459	55,517	56,325	57,930	59,157	60,148	60,995	61,422	61,562	16.11%
Carroll	39,908	40,781	41,724	42,815	43,666	44,360	45,288	45,985	46,847	47,048	47,475	18.96%
Cheshire	72,203	72,805	73,144	73,447	73,825	74,417	75,088	76,089	76,735	77,053	77,393	7.19%
Coos	33,544	33,437	33,087	32,998	33,111	33,015	33,011	33,036	33,058	33,156	33,019	-1.57%
Grafton	79,555	79,942	81,028	81,387	81,743	82,000	82,593	83,347	84,097	84,793	85,336	7.27%
Hillsborough	358,624	364,261	370,595	376,407	380,841	388,608	391,937	394,366	398,217	400,516	402,789	12.32%
Merrimack	128,452	130,236	132,067	134,455	136,225	138,797	141,743	143,697	145,309	146,823	148,085	15.28%
Rockingham	261,609	265,606	269,455	273,853	277,359	283,766	287,673	290,052	292,016	294,211	296,267	13.25%
Strafford	108,315	109,308	110,635	111,028	112,233	114,522	116,036	117,185	118,224	118,998	119,990	10.78%
Sullivan	39,489	39,658	39,746	40,107	40,458	40,993	41,444	42,013	42,463	42,799	42,979	8.84%

Source: US Census Bureau

A projection of state population prepared by the New Hampshire Office of Energy and Planning predicts that the population of New Hampshire will continue to grow steadily at an annual rate of about 0.7%. This projection forecasts a state population of 1,365,000 in 2010 and a population of 1,565,000 in 2030. Table 3 below shows the projections of future state population as reported by the New Hampshire Office of Energy and Planning.

Table 3
New Hampshire Projected State Population

	2010	2015	2020	2025	2030	Annual Growth
Projected State Pop.	1,365,000	1,420,000	1,470,000	1,520,000	1,565,000	0.69%

Source: New Hampshire Office of Energy and Planning, November 2006

Chapter 2 Corrections Trends & Demographics

A correctional system has three interweaving components that should be examined in order to gain a better understanding of the system. These components are:

- Average daily population: the average number of inmates housed in a facility/system daily
- Admissions, or bookings: the number of inmates admitted to a facility/system by day, month, or year
- Average length of stay: the average time an inmate spends in a facility/system before he or she is released

This section will examine each of these components in turn in order to determine the driving force behind New Hampshire's prison inmate population.

Average Daily Population & Peaking

Perhaps the greatest tool for predicting the future needs of a prison system is the historical inmate population of that system. Examining the recent trends in the population of the system provides insight into what can be expected in the future. The New Hampshire Department of Corrections provided monthly average daily population (ADP) data from January 2002 to December 2007.

During some short periods of time, a correctional system may experience a brief spike in its population. For this reason, future space needs cannot be predicted based on ADP alone. In order to account for these spikes, a "peaking factor" is calculated for each historical year. The three months of the year with the highest ADP values are averaged together as the "three-month high." The peaking factor is then calculated as the percentage difference between the three-month high and the year's overall ADP.

Table 4 below presents the monthly ADP of the New Hampshire prison system from 2002 to 2007, along with the three-month high and peaking percentages of each year.

## New Hampshire Prisons Average Daily Population w/ Peaking

	2002	2003	2004	2005	2006	2007
January	2,449	2,509	2,467	2,476	2,551	2,657
February	2,462	2,498	2,447	2,483	2,572	2,669
March	2,476	2,515	2,417	2,479	2,568	2,693
April	2,514	2,492	2,405	2,476	2,583	2,700
May	2,512	2,497	2,408	2,465	2,593	2,716
June	2,515	2,515	2,446	2,487	2,614	2,730
July	2,532	2,486	2,447	2,444	2,620	2,701
August	2,534	2,479	2,455	2,473	2,620	2,719
September	2,516	2,496	2,480	2,498	2,637	2,744
October	2,516	2,472	2,454	2,487	2,633	2,765
November	2,497	2,459	2,467	2,499	2,650	2,732
December	2,502	2,438	2,450	2,500	2,641	2,713
Average	2,502	2,488	2,445	2,481	2,607	2,712
3-month High[1]	2,527	2,513	2,471	2,499	2,643	2,747
Peaking[1]	1.01%	1.00%	1.07%	0.74%	1.37%	1.31%
					Average Peaking	1.08%

Source: NH Department of Corrections Statsitical Report for State Prisons
[1] Carter Goble Associates, February 2008

The annual ADP in New Hampshire experienced a brief period of slow decline from 2002 to 2004, followed by a period of rapid growth from 2005 to 2007. ADP was generally relatively stable within each year, resulting in low annual peaking factors ranging from 0.74% to 1.37%. The average peaking of the six year period was only 1.08%.

Figure 1 below graphically represents the annual ADP of New Hampshire's prison system from 2002 to 2007.

Figure 1

Source: NH Department of Corrections Stastical Report for State Prisons
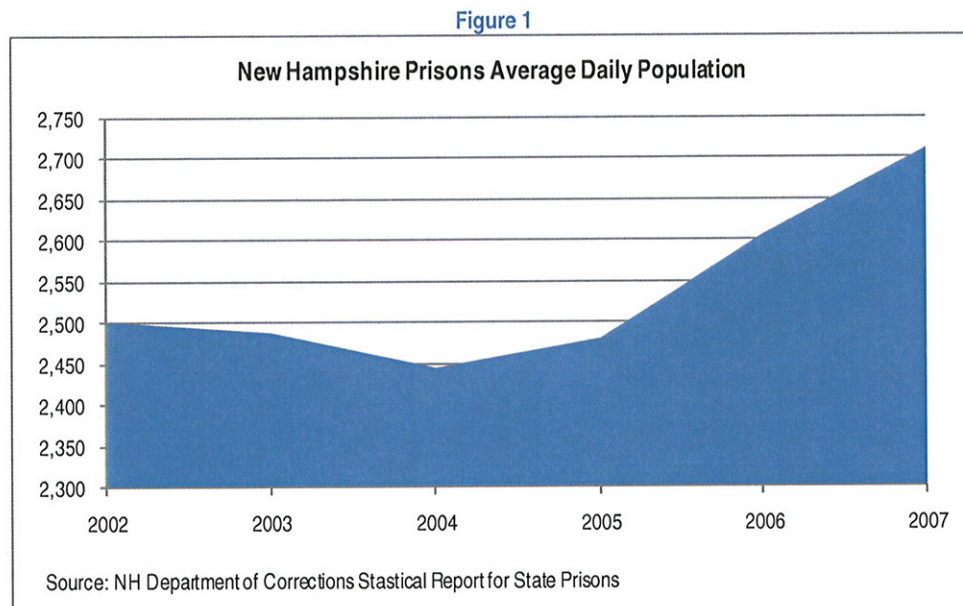
Admissions

Admissions are a census based number that refers to all persons admitted to a prison system regardless of their length of stay. Admissions (ADM) data does not differentiate between individuals released that same day and those who are incarcerated for longer periods of time.

Monthly admissions data from January 2002 to December 2007 was provided by the New Hampshire Department of Corrections. Admissions followed a similar pattern to ADP, with a period of decline from 2002 to 2004 and a period of growth thereafter. Both ADP and ADM were at their lowest in 2004 and at their highest in 2007, when ADM surpassed 1,500 inmates. Table 5 shows the monthly and annual ADM to New Hampshire prisons from 2002 to 2007.

Table 5
New Hampshire Prisons Monthly Admissions

	2002	2003	2004	2005	2006	2007
January	137	141	127	139	127	149
February	104	105	91	107	104	108
March	146	118	121	138	118	134
April	147	140	128	105	101	131
May	141	125	70	137	154	144
June	119	128	143	112	117	110
July	143	114	128	109	106	111
August	112	133	123	137	125	139
September	95	125	133	127	140	121
October	114	104	84	122	132	149
November	95	98	116	133	137	107
December	104	97	107	108	122	103
Total	1,457	1,428	1,371	1,474	1,483	1,506

Source: NH Department of Corrections Statsitical Report for State Prisons

Figure 2 graphically illustrates the annual ADM from 2002 to 2007 as reported by New Hampshire Department of Corrections Statistical Report for State Prisons.

Figure 2
New Hampshire Prisons Monthly Admissions

Source: NH Department of Corrections Stastical Report for State Prisons
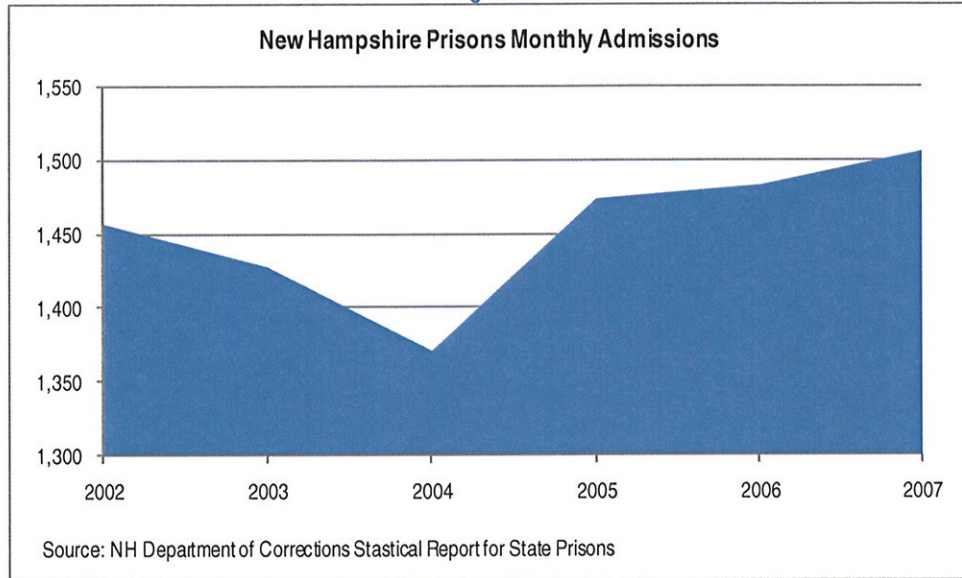
New Hampshire Department of Corrections Annual Reports from fiscal years 1998 to 2006 detail annual admissions by status and by type of offense. When comparing admissions by type of offense, parole violations consistently account for more admissions than any other offense. Admissions for parole violations have also been steadily rising since 1998, growing by 58% over 8 years. Admissions for non-violent and drug offenses have also increased by over 50%. Admissions for probation violations and violent offenses, however, have remained mostly stable, and admissions for property offenses have decreased by 41%. Table 6 below shows the annual admissions to New Hampshire prisons from 1998 to 2006 by type of offense.

Table 6
New Hampshire Prison Admissions by Crime Type (Fiscal Year)

Fiscal Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Parole Vio.	331	372	360	347	405	390	447	447	522
Probation Vio.	122	171	152	182	193	155	110	116	128
Violent	125	103	100	102	134	112	116	127	128
Sex. Assault	80	89	78	98	76	96	93	96	111
Property	107	106	117	131	138	123	90	82	63
Non-Violent	106	113	114	140	126	138	134	159	168
Drug	106	93	109	123	94	99	120	113	162

Source: New Hampshire Department of Corrections Annual Report (Fiscal Years 1998-2006)

Figure 3 below graphically illustrates the admissions by type of offense as shown in Table 6. Figure 3 shows that parole violations significantly outnumber other offenses.

Figure 3

New Hampshire Admissions by Type of Crime (Fiscal Year)

Source: New Hampshire Department of Corrections Annual Report (Fiscal Years 1998-2006)
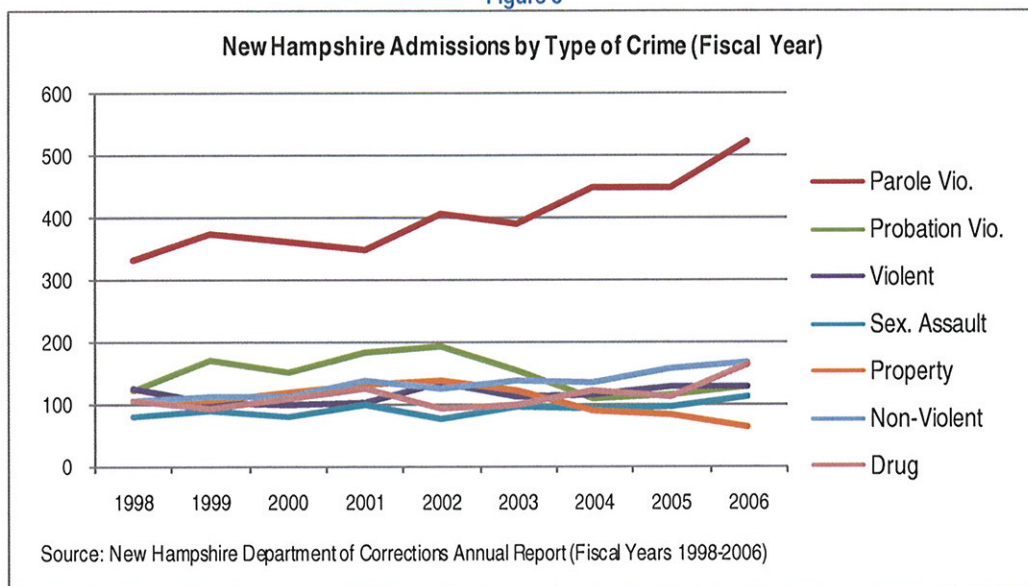
Average Length of Stay

Another important indicator of a corrections system's potential for growth is the average length of stay (ALOS) of its inmates. Average length of stay is calculated according to the following formula:

$$ALOS = (Annual\ ADP \times 365\ days)\ /\ Annual\ ADM$$

Given an equal number of bookings, a variation in the ALOS can have a significant impact on the size of the prison system's population. Table 7 below shows the calculated ALOS of inmates in the New Hampshire prison system from 2002 to 2007, as reported by the New Hampshire Department of Corrections in its Annual Statistical Reports for State Prisons.

Table 7
New Hampshire Prisons Average Length of Stay

	2002	2003	2004	2005	2006	2007
Annual ADP	2,502	2,488	2,445	2,481	2,607	2,712
Annual ADM	1,457	1,428	1,371	1,474	1,483	1,506
ALOS (Days)[1]	627	636	651	614	642	657

Source: NH Department of Corrections Statsitical Report for State Prisons
[1] Carter Goble Associates, February 2008

ALOS has fluctuated from 2002 to 2007, but the overall trend is increasing. Despite dropping sharply in 2005 to a six-year low of 614 days, ALOS rebounded in 2006 and continued to rise in 2007, where it was the highest of the six-year period at 657 days. Overall, ALOS has grown by 4.8% since 2002, indicating an annual growth of 0.9%. Figure 4 graphically illustrates the annual ALOS from Table 7.

Figure 4

New Hampshire Prisons Average Length of Stay

Source: NH Department of Corrections Stastical Report for State Prisons
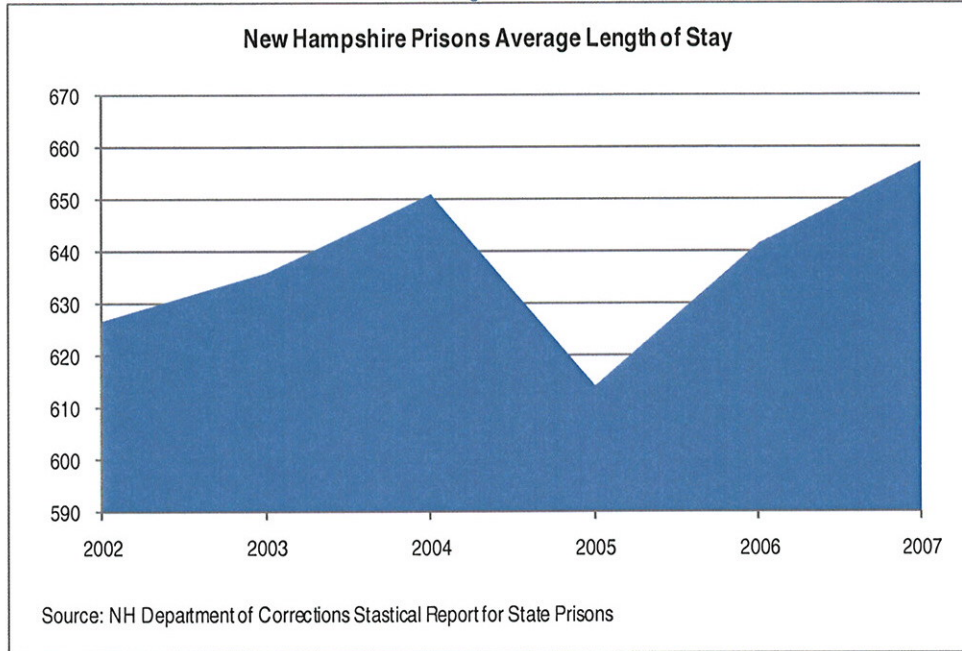
Because of the formulaic relationship between ALOS, ADM, and ADP, changes in ALOS and ADP work together to influence the population of a prison system. In New Hampshire's case, both annual admissions and the average length of stay of inmates have increased since 2002, and both were at their six-year highest in 2007. As a result of both of these increases, the ADP of New Hampshire's prisons has increased dramatically from 2005 to 2007.

Given the same number of admissions into the system, the average length of stay of inmates can have a sizable impact on the average daily population. To illustrate this, Table 8 shows how a change in ALOS would affect annual ADP if the historical number of admissions from 2002 to 2007 were to remain the same.

Table 8
Impact of ALOS on Average Daily Population

	2002	2003	2004	2005	2006	2007
ADM	1,457	1,428	1,371	1,474	1,483	1,506
657	2,623	2,571	2,469	2,654	2,670	2,712
651	2,599	2,547	2,445	2,629	2,645	2,686
650	2,595	2,543	2,442	2,625	2,641	2,682
642	2,561	2,510	2,410	2,591	2,607	2,647
640	2,555	2,504	2,404	2,585	2,600	2,641
636	2,539	2,488	2,389	2,568	2,584	2,624
630	2,515	2,465	2,366	2,544	2,560	2,599
627	2,502	2,452	2,354	2,531	2,547	2,586
620	2,475	2,426	2,329	2,504	2,519	2,558
614	2,452	2,403	2,307	2,481	2,496	2,534
610	2,435	2,387	2,291	2,463	2,478	2,517
600	2,395	2,347	2,254	2,423	2,438	2,476

(The leftmost column labeled "ALOS" spans the ALOS value rows.)

Source: Carter Goble Associates, March 2008

Historical ADM and ADP from New Hampshire Department of Corrections

Table 8 shows that if the average length of stay in 2007 had been the same as in 2005 (614 days), the ADP in 2007 would have been lowered by 178 inmates, a 7% reduction. A more conservative reduction to the 2006 ALOS (642 days) would result in a reduction of 65 inmates.

Sentences Received

The New Hampshire Department of Corrections publishes the lengths of sentences received by inmates admitted each year in its annual reports. The following table breaks down admissions from fiscal years 1998 through 2005 by sentences of less than one year, one to two years, two to four years, and greater than four years.

Table 9
Length of Prison Sentences Received (Admissions)

		1998	1999	2000	2001	2002	2003	2004	2005
Numerical	<1 Year	5	5	9	11	8	11	14	8
	1-2 Years	152	151	149	195	181	165	183	221
	2-4 Years	271	255	263	267	268	258	236	223
	>4 Years	96	93	97	121	111	134	120	125
Percentage	<1 Year	0.95%	0.99%	1.74%	1.85%	1.41%	1.94%	2.53%	1.39%
	1-2 Years	29.01%	29.96%	28.76%	32.83%	31.87%	29.05%	33.09%	38.30%
	2-4 Years	51.72%	50.60%	50.77%	44.95%	47.18%	45.42%	42.68%	38.65%
	>4 Years	18.32%	18.45%	18.73%	20.37%	19.54%	23.59%	21.70%	21.66%

Source: New Hampshire Department of Corrections Annual Report (Fiscal Years 1998-2005)

Typically, less than 2% of inmates admitted have been sentenced to less than one year. Inmates admitted with sentences between one and four years have historically accounted for about 75-80% of the total, while those sentenced to more than four years have made up about 18-24%. Recently, sentences of one to two years have increased from 29% in 1998 to 38% in 2005, while sentences of two to four years have decreased from 52% in 1998 to 39% in 2005. Sentences of greater than four years have increased slightly

from 18% to 22% over the eight year period. Figure 5 below graphically illustrates the sentence lengths received, by percentage, from 1998 to 2005.

Figure 5

Percentage of Sentence Lengths Received (Admissions)

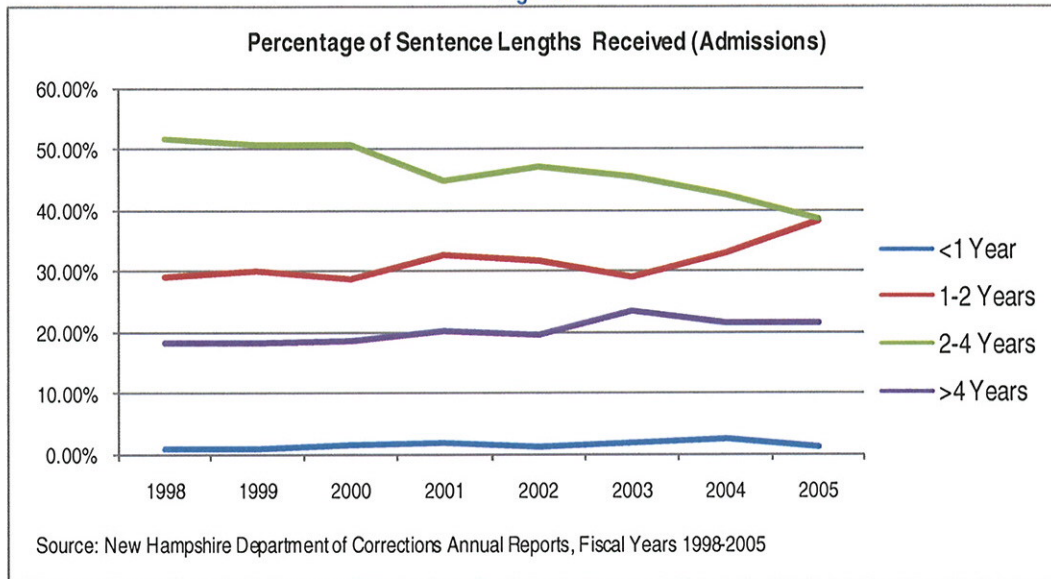Source: New Hampshire Department of Corrections Annual Reports, Fiscal Years 1998-2005

Figure 6 below shows the sentences being served by the inmate population of New Hampshire prisons in fiscal year 2006. It shows that 1,067 of 2,594 inmates (41%) in fiscal year 2006 were serving sentences of less than 2 years, and 1,614 (62%) were serving sentences less than 4 years.

Figure 6

New Hampshire Prison Sentences Being Served, Fiscal Year 2006

Source: New Hampshire Department of Corrections Annual Report, Fiscal Year 2006
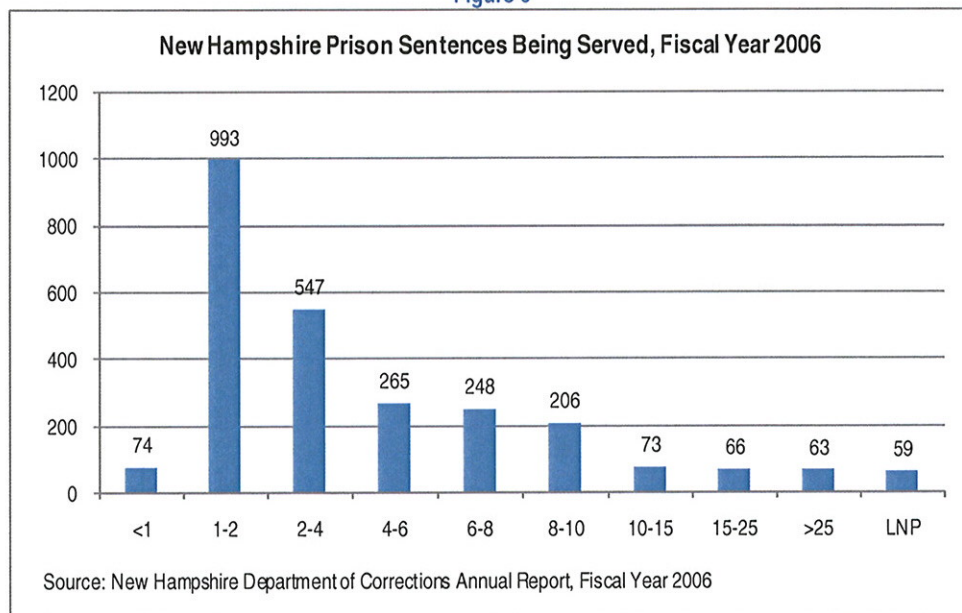
Chapter 3 Projections

A series of models were developed in order to project the future average daily population of the New Hampshire prison system. By estimating the future population of the prison and applying a percentage-based peaking factor and classification factor, an estimated number of needed beds can be reached.

Exponential smoothing is a sophisticated statistical model designed to "smooth" out short term fluctuations while highlighting long term trends. It does so by calculating a weighted moving average which gives more weight to recent terms in the time series. Exponential smoothing and other forecast models have various performance indicators that help evaluate their "fit" to the historical data. Among these indicators are the R-square value, which indicates a better fit the closer it is to 1, and the mean absolute percentage error (MAPE), which is expressed as a percentage that is best when close to zero. Several exponential smoothing models were considered as forecasts of New Hampshire's future prison ADP. Among those variations considered are simple exponential smoothing (no trend, no seasonality), Winters (linear trend, additive seasonality) and linear trend with multiplicative seasonality.

An autoregressive integrated moving average (ARIMA) model is another sophisticated method of forecasting a time series. An ARIMA model has three terms, which refer to the order of the autoregressive, integrated, and moving average parts of the model. Like exponential smoothing, ARIMA models have performance indicators which help to evaluate how well they fit the data series. Several ARIMA models with different terms were considered.

Comparison of Models & Recommendation

Of the models considered, most performed similarly well, with very favorable R-square and MAPE values. Table 10 below shows a comparison of each model run.

Table 10
Projection of Average Daily Population

	Model	Type	R-square	2007*	2010	2015	2020	2025	2030
Model 1	ARIMA	(0,1,0)*(1,1,1)	0.9715	2,712	3,027	3,538	4,060	4,571	5,092
Model 2	ARIMA	(0,1,0)*(1,0,1)	0.9684	2,712	2,857	3,089	3,305	3,507	3,696
Model 3	ARIMA	(1,1,2)*(1,0,1)	0.9691	2,712	2,867	3,134	3,383	3,616	3,834
Model 4	Exp. Smooth.	no trend, no seasonality	0.9591	2,712	2,714	2,714	2,714	2,714	2,714
Model 5	Exp. Smooth.	linear trend, additive seasonality	0.9677	2,712	2,858	3,120	3,383	3,645	3,908
Model 6	Exp. Smooth.	linear trend, multiplicative seasonality	0.9677	2,712	2,859	3,123	3,386	3,650	3,913
Average	1, 3 ,6				2,918	3,265	3,610	3,946	4,280

Source: Carter Goble Associates, February 2008

* New Hampshire Department of Corrections

In order to attain a forecast that takes into account the variety of models run, it is recommended that an average be calculated to include models of various types and encompass a range of projected values. For this reason, Models 1, 3, and 6 were averaged to include both ARIMA and Exponential Smoothing models and a high (Model 1), medium (Model 6) and low (Model 3) range of forecasted ADP values.
The average of those three models serves as the recommended forecast of prison ADP in New Hampshire. According to this forecast, the ADP will be about 2,900 in 2010, 3,600 in 2020, and 4,300 in 2030.

Bed Need

The bed need of a prison system is determined by the projected future population as well as other factors, such as the historical peaking percentage and demographics of the inmates. The peaking factor in New Hampshire has been calculated as a fairly low 1.1%. Additionally, a 10% classification factor is recommended to insure that inmates can be properly classified according to need without facing spatial restrictions.

Historical trends in the gender and classification breakdown of the prison system's population serve as indication of how beds will need to be divided in the future. The female population of New Hampshire's prisons has been following an increasing trend in recent years. Table 11 shows the inmate population of each New Hampshire facility by gender at the end of fiscal years 2001 through 2006, as reported by the New Hampshire Department of Corrections.

Table 11
New Hampshire Prisons Inmate Population by Facility/Gender
(End of Fiscal Year)

Fiscal Year	2001	2002	2003	2004	2005	2006
Male	2,201	2,332	2,344	2,328	2,353	2,440
AHC	11	19	17	15	17	16
CCC	122	126	124	95	110	108
OOS	66	71	75	75	76	72
HOC	14	9	6	11	10	6
LRF	357	325	277	255	242	286
NCF	358	497	499	506	516	542
NHSP	1,259	1,277	1,334	1,355	1,356	1,377
NHPW	0	0	0	0	0	0
SPU	14	8	12	16	26	33
Female	122	150	141	118	143	154
AHC	4	1	4	3	6	4
CCC	8	14	15	7	40	41
OOS	4	5	6	6	6	5
HOC	3	2	2	2	1	5
LRF	33	52	36	21	0	0
NCF	0	0	0	0	0	0
NHSP	0	0	0	0	0	0
NHPW	70	76	77	79	86	95
SPU	0	0	1	0	4	4
Total	2,323	2,482	2,485	2,446	2,496	2,594
% Female Inmates	5.25%	6.04%	5.67%	4.82%	5.73%	5.94%

Source: New Hampshire Department of Corrections Annual Report (Fiscal Years 1998-2005)

Table 11 shows that the percentage of female inmates grew from 5.25% in 2001 to 5.94% in 2006, representing an overall change of .69% and an annual growth factor of 0.0248. By projecting this growth to continue into the future, it is expected that 6.6% of New Hampshire's prison inmates will be female in 2010, 8.4% will be female in 2020, and 10.7% will be female in 2030.

Table 12 below shows the projected bed need of New Hampshire in 5 year increments from 2010 to 2030, taking into account the projected growth of female inmates and applying a peaking factor of 1.1% and a classification factor of 10%.

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Table 12
Projected Bed Need

	2010	2015	2020	2025	2030
ADP	2,918	3,265	3,610	3,946	4,280
Peaking (1.1%)	32	36	40	43	47
Classification (10%)	292	326	361	395	428
Bed Need	3,241	3,627	4,010	4,384	4,755
% Female Beds*	6.55%	7.40%	8.37%	9.46%	10.69%
Female Beds	212	268	336	415	508
Male Beds	3,029	3,359	3,674	3,969	4,247

</div>

Source: Carter Goble Associates, February 2008

* assumes historical 2001-2006 annual growth of 2.48%

The bed need of New Hampshire prisons is projected to be 3,241 total beds in 2010, including 212 female beds and 3,029 male beds. By 2030, a bed need of 4,755 is projected, including 508 female beds and 4,246 male beds.

New Hampshire's prison system has five levels of security classification, ranked C1 (minimum) to C5 (maximum), in addition to reception & diagnostic, quarantine, and protective custody classifications. A snapshot of inmate classification from January 2008 provides a baseline distribution of inmates that can be used to predict the classification requirements of future beds. Table 13 below shows the 2008 snapshot, the percentage breakdown of the various classifications, and the application of that breakdown to future bed needs.

<div align="center">

Table 13
New Hampshire Forecasted Security Classification Breakdown

	C1	C2	C3	C4	C5	R&D / Quarantine / PC	Total
2008 Snapshot[1]	381	538	1,546	115	30	150	2,760
% Breakdown	13.80%	19.49%	56.01%	4.17%	1.09%	5.43%	100.00%
2010 Beds	447	632	1,816	135	35	176	3,241
2015 Beds	501	707	2,032	151	39	197	3,627
2020 Beds	554	782	2,246	167	44	218	4,010
2025 Beds	605	854	2,455	183	48	238	4,384
2030 Beds	656	927	2,663	198	52	258	4,755

</div>

Source: Carter Goble Associates
[1] New Hampshire Department of Corrections

Over half of all inmates are currently classified as C3 security, and the majority of remaining inmates (34%) is classified as C1 or C2. Only 5% of inmates are currently classified as either C4 or C5, while another 5% of inmates fall under reception & diagnostic, quarantine, or protective custody.